



901 S Division
Pinehurst, ID 83850
Office 208/682-9190
Fax 208/682-2737
www.ferguson-contracting.com

BHCTP Monthly Discharge Monitoring Report

Month: September-16
Facility: Central Treatment Plant
Location: Bunker Hill Superfund Site
Contract Number: W912DW-13-C-0026-P00012

Total Flow For The Month From 006 Outfall: 48,536,000 gallons
Sludge pumping to CIA sludge pond: 1,281,000 gallons

Total Flow From Kellogg Tunnel: 49,796,420 gallons

Percent of Influent Successfully Treated: 100.0%

13 sample days * 6 parameters (Pb, Cd, Zn, Mn, TSS & pH) = 78 potential exceedances
78 - 0 exceedances = 78 78/78 = 100%

Results of Sampling Efforts:

All sampling has been performed in accordance with specifications and the Sampling and Analysis Plan. QC and QA samples have been taken as required. All sample analysis results may be found within this DMR.

Performance Evaluation (PE) sampling for the CTP continued, with four PE samples delivered to SVL for this reporting period. The PE samples were identified as CTPXX (random CTP sites). These samples consisted of preserved 500-ml trace metal samples to be analyzed for Cd, Pb and Zn. The PE acceptable quantitation range is listed on the 'QC' page of this DMR.

Trip blank and rinsate samples were also taken, with the results being reported on the 'PTM-004, RB, TB' page of this DMR.

Highlights of Plant Maintenance and/or Plant Optimization:

09-01-16 Performed monthly fire extinguisher inspection. All CTP fire extinguishers are fully charged and in good working condition at this time.

09-01-16 Performed monthly pump and motor inspection. All CTP pumps and motors are in good condition at this time with the exception of the Rapid Mix gear box. Gear box vibration is increasing.

09-01-16 Requested OMER funds to purchase batteries for the uninterrupted power supply (UPS) unit. The UPS provides power to the control components during power outages and generator run delay periods. The power supply battery life is approximately 5 years.

09-07-16 Operators dismantled the silo B lime feed gear box to investigate increased vibration and noise. Operators found an internal bearing had failed. A new bearing set was ordered and will be installed upon arrival.

09-13-16 Performed the monthly no-load emergency generator run test and diagnostics. The emergency generator was operated for 30 minutes with no issues or errors to report.

09-14-16 CTP Lead Operator, Process Engineer, Project Manager and COR attended the monthly CTP process review meeting. Process pH of 8.3 was discussed. KT discharge pumping schedule was reviewed. Process quality, plant operations and operator work schedules were reviewed. OMER projects were reviewed. OMER request for replacement of service items was discussed in detail.

09-19-16 Provided site access to CH2M Hill crew and IDEQ personnel.

09-20-16 Operators replaced the flocculent injection pump impeller unit and replaced the flocculent drive motor with the inventory stock used drive motor. Operators will attempt to rebuild the worn drive motor, as the used pump is not reliable for extended usage.

09-26-16 Provided site access to CH2M Hill crew and IDEQ personnel.

09-27-16 Operators performed the monthly full load emergency generator run test. The emergency generator operated all CTP components for one hour as programmed with no issues or errors to report.

09-27-16 Operators replaced the Aeration Basin pH probe. Several calibration attempts were performed on the probe in the past week. One probe was removed from the inventory stock list. Inventory stock remains at the required amount of three at this time.

09-28-16 Performed the quarterly Direct Feed Line cleaning event. Project safety meeting, confined space evaluation and monitoring were all performed prior to beginning the AMD line cleaning.

09-30-16 Performed monthly data totalizing and meter resets.

During this reporting period:

- The Kellogg Tunnel discharge flow decreased by 7% from September 2015, from 53.8 mg to 49.8 mg.
- The Kellogg Tunnel zinc concentration increased by 8% from September 2015, from an average of 63 mg/L to 68 mg/L.
- The CTP operating pH set point was increased to 8.5 from 8.3 during extended KT low-flow periods.
- The flocculent dosage remained at approximately 2 ppm to reduce process turbidity.
- The CTP sludge recycle rate remained at 400 gpm.
- CTP operators received no off-shift auto dialer call-out alarms.
- CTP operators performed no pumping events from the Lined Storage Pond.
- CTP operators verified Aeration Basin pH probe and grab sample values twice per day.
- CTP operators observed no Kellogg Tunnel mine or mill operations.

Lessons Learned

No significant lessons to report for last month.

| MONITORING PERIOD | | | | | | |
|-------------------|----|-----|--|------|----|-----|
| YEAR | MO | DAY | | YEAR | MO | DAY |
| 2016 | 9 | 1 | | 2016 | 9 | 30 |

| PARAMETER | | Quantity or Loading | | | Quality or Concentration | | | | FREQUENCY OF ANALYSIS | SAMPLE TYPE |
|------------------------------|--------------------|---------------------|---------------|---------|--------------------------|-----------------|---------------|-------|-----------------------|-------------|
| | | MONTHLY AVERAGE | DAILY MAXIMUM | UNITS | MINIMUM | MONTHLY AVERAGE | DAILY MAXIMUM | UNITS | | |
| pH | Sample Measurement | | | | 6.68 | | 7.31 | | Continuous | Meter |
| | Permit Required | | | | 6.0 | | 10.0 | | | |
| Flow Thru Treatment Plant | Sample Measurement | 1.62 | 2.04 | mgd | | | | | | |
| | Permit Required | | Daily | | | | | | | |
| Lead Total - Pb Effluent | Sample Measurement | 0.05 | 0.07 | lbs/day | | 0.004 | 0.004 | mg/L | three samples/ week | Comp 24 |
| | Permit Required | 14.8 | 37.0 | | | 0.30 | 0.60 | mg/L | | |
| Zinc Total - Zn Effluent | Sample Measurement | 2.22 | 3.15 | lbs/day | | 0.16 | 0.23 | mg/L | three samples/ week | Comp 24 |
| | Permit Required | 36.2 | 91.3 | | | 0.73 | 1.48 | mg/L | | |
| Cadmium - Cd Effluent | Sample Measurement | 0.04 | 0.062 | lbs/day | | 0.003 | 0.004 | mg/L | three samples/ week | Comp 24 |
| | Permit Required | 2.40 | 6.10 | | | 0.050 | 0.100 | mg/L | | |
| Manganese - Mn Effluent | Sample Measurement | 218 | 365 | lbs/day | | 16.6 | 23.3 | mg/L | three samples/ week | Comp 24 |
| | No Permit Required | | | | | N/A | N/A | mg/L | | |
| Total Suspended Solids - TSS | Sample Measurement | 12.6 | 27 | lbs/day | | 1.0 | 1.6 | mg/L | three samples/ week | Comp 24 |
| | Permit Required | 985 | 1907 | | | 20 | 30 | mg/L | | |

PREPARED BY: GARY FULTON

REVIEWED BY: Mark Reinsel, Ph.D., P.E.

**NPDES DISCHARGE POINT 006
CENTRAL TREATMENT PLANT
MONTH: Sep-16**

| DAY | LEAD (Pb) | | ZINC (Zn) | | CADMIUM (Cd) | | MANGANESE (Mn) | | pH | FLOW | TSS | | LOADING |
|---------------------|---------------|---------|--------------|---------|--------------|---------|----------------|---------|-------------|------|--------------|---------|---------|
| | mg/L | lbs/day | mg/L | lbs/day | mg/L | lbs/day | mg/L | lbs/day | | mgd | mg/L | lbs/day | kg/day |
| 1 | | 0.026 | | 1.60 | | 0.03 | | 166 | | 0.85 | | 4.27 | 1.94 |
| 2 | 0.004 | 0.050 | 0.225 | 3.15 | 0.004 | 0.06 | 23.3 | 326 | 7.16 | 1.68 | 0.6 | 8.40 | 3.81 |
| 3 | | 0.042 | | 2.65 | | 0.05 | | 274 | | 1.41 | | 7.06 | 3.20 |
| 4 | | 0.024 | | 1.51 | | 0.03 | | 157 | | 0.81 | | 4.04 | 1.83 |
| 5 | 0.004 | 0.050 | 0.176 | 2.42 | 0.003 | 0.04 | 7.92 | 109 | 7.16 | 1.65 | 1.0 | 13.8 | 6.24 |
| 6 | | 0.059 | | 2.86 | | 0.05 | | 129 | | 1.95 | | 16.3 | 7.38 |
| 7 | 0.004 | 0.060 | 0.183 | 3.07 | 0.004 | 0.06 | 13.5 | 226 | 6.68 | 2.01 | 0.6 | 10.1 | 4.56 |
| 8 | | 0.060 | | 3.07 | | 0.06 | | 226 | | 2.01 | | 10.1 | 4.56 |
| 9 | 0.004 | 0.065 | 0.167 | 2.79 | 0.003 | 0.06 | 20.9 | 349 | 7.10 | 2.00 | 1.2 | 20.0 | 9.08 |
| 10 | | 0.063 | | 2.70 | | 0.06 | | 338 | | 1.94 | | 19.4 | 8.81 |
| 11 | | 0.065 | | 2.80 | | 0.06 | | 350 | | 2.01 | | 20.1 | 9.12 |
| 12 | 0.004 | 0.059 | 0.150 | 2.47 | 0.003 | 0.05 | 21.5 | 354 | 7.15 | 1.97 | 1.0 | 16.5 | 7.47 |
| 13 | | 0.061 | | 2.55 | | 0.05 | | 365 | | 2.04 | | 17.0 | 7.70 |
| 14 | 0.004 | 0.032 | 0.151 | 1.34 | 0.003 | 0.03 | 22.1 | 197 | 7.08 | 1.07 | 1.4 | 12.4 | 5.65 |
| 15 | | 0.024 | | 1.00 | | 0.02 | | 146 | | 0.79 | | 9.23 | 4.19 |
| 16 | 0.004 | 0.049 | 0.155 | 2.12 | 0.003 | 0.04 | 12.0 | 164 | 7.08 | 1.64 | 0.6 | 8.21 | 3.72 |
| 17 | | 0.060 | | 2.57 | | 0.04 | | 199 | | 1.99 | | 9.9 | 4.51 |
| 18 | | 0.060 | | 2.56 | | 0.04 | | 198 | | 1.98 | | 9.92 | 4.50 |
| 19 | 0.004 | 0.058 | 0.117 | 1.89 | 0.003 | 0.05 | 13.9 | 224 | 7.19 | 1.93 | 1.6 | 25.8 | 11.72 |
| 20 | | 0.060 | | 1.96 | | 0.05 | | 233 | | 2.01 | | 26.8 | 12.17 |
| 21 | 0.004 | 0.031 | 0.135 | 1.15 | 0.003 | 0.02 | 18.6 | 158 | 7.05 | 1.02 | 1.4 | 11.92 | 5.40 |
| 22 | | 0.024 | | 0.91 | | 0.02 | | 125 | | 0.80 | | 9.39 | 4.26 |
| 23 | 0.004 | 0.050 | 0.193 | 2.69 | 0.002 | 0.03 | 10.0 | 139 | 7.31 | 1.67 | 1.0 | 13.9 | 6.32 |
| 24 | | 0.058 | | 3.12 | | 0.04 | | 162 | | 1.94 | | 16.2 | 7.34 |
| 25 | | 0.058 | | 3.12 | | 0.04 | | 162 | | 1.94 | | 16.2 | 7.33 |
| 26 | 0.004 | 0.057 | 0.125 | 1.99 | 0.002 | 0.03 | 16.0 | 254 | 7.07 | 1.90 | 0.6 | 9.5 | 4.32 |
| 27 | | 0.060 | | 2.10 | | 0.03 | | 268 | | 2.01 | | 10.1 | 4.56 |
| 28 | 0.004 | 0.031 | 0.145 | 1.25 | 0.003 | 0.02 | 20.3 | 174 | 7.12 | 1.03 | 0.6 | 5.2 | 2.34 |
| 29 | | 0.024 | | 0.96 | | 0.02 | | 134 | | 0.79 | | 4.0 | 1.80 |
| 30 | 0.004 | 0.051 | 0.159 | 2.26 | 0.003 | 0.04 | 15.6 | 221 | 7.18 | 1.70 | 0.8 | 11.3 | 5.15 |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| Total | 0.047 | 1.473 | 2.081 | 66.6 | 0.038 | 1.202 | 216 | 6,530 | 92.3 | 48.5 | 12.4 | 377 | 171 |
| Sample Events | 13 | 30 | 13 | 30 | 13 | 30 | 13 | 30 | 13 | 30 | 13 | 30 | 30 |
| Daily Average | 0.004 | 0.049 | 0.16 | 2.22 | 0.003 | 0.04 | 16.6 | 218 | 7.10 | 1.62 | 0.95 | 12.6 | 5.70 |
| Lab Detection Limit | 0.0036 | | 0.003 | | 0.001 | | 0.0024 | | 0.01 | | 0.600 | | |

| | | | | | | | | | | | | | |
|-----|--------|------|------|------|--------|------|-------|-----|------|------|------|-------|-------|
| MIN | 0.0036 | 0.02 | 0.12 | 0.91 | 0.002 | 0.02 | 7.92 | 109 | 6.68 | 0.79 | 0.60 | 3.96 | 1.80 |
| MAX | 0.0039 | 0.07 | 0.23 | 3.15 | 0.0044 | 0.06 | 23.30 | 365 | 7.31 | 2.04 | 1.60 | 26.84 | 12.17 |

Notes:

(X mg/L) * (1 kg/10⁶ mg) * (2.205 lbs/kg) * (3.785 L/gal) * (10⁶ gal/Mgal) * (Y Mgal/day) = (X) * (Y) * (8.345) in lbs/day
(X lbs/day) * (1 kg/2.205 lbs) = (X) / (2.205) in kg/day

**KELLOGG TUNNEL DISCHARGE
CENTRAL TREATMENT PLANT
MONTH: Sep-16
Data from SVL**

| DAY | LEAD (Pb) | | ZINC (Zn) | | CADMIUM (Cd) | | MANGANESE (Mn) | | pH | 006 FLOW mgd | TSS | | |
|---------------|-----------|---------|-----------|---------|--------------|---------|----------------|---------|------|-----------------|------|---------|--------|
| | mg/L | lbs/day | mg/L | lbs/day | mg/L | lbs/day | mg/L | lbs/day | | | mg/L | lbs/day | kg/day |
| 1 | 0.421 | 3.00 | 94 | 668.4 | 0.169 | 1.20 | 30 | 211.4 | 2.91 | 0.85 | 19 | 135.2 | 61.3 |
| 2 | | 5.89 | | 1,314 | | 2.37 | | 415.6 | | 1.68 | | 265.9 | 121 |
| 3 | | 4.95 | | 1,104 | | 1.99 | | 349.3 | | 1.41 | | 223.4 | 101 |
| 4 | | 2.83 | | 632.1 | | 1.14 | | 199.9 | | 0.81 | | 127.9 | 58.0 |
| 5 | 0.448 | 6.17 | 53 | 726.7 | 0.083 | 1.14 | 79 | 1,091 | 3.28 | 1.65 | 82 | 1,129 | 512 |
| 6 | | 7.29 | | 859.2 | | 1.35 | | 1,290 | | 1.95 | | 1,334 | 605 |
| 7 | | 7.51 | | 885.6 | | 1.39 | | 1,330 | | 2.01 | | 1,375 | 624 |
| 8 | 0.416 | 6.98 | 50 | 835.3 | 0.078 | 1.32 | 77 | 1,285 | 3.29 | 2.01 | 81 | 1,359 | 616 |
| 9 | | 6.94 | | 831.2 | | 1.31 | | 1,278 | | 2.00 | | 1,352 | 613 |
| 10 | | 6.73 | | 806.2 | | 1.27 | | 1,240 | | 1.94 | | 1,311 | 595 |
| 11 | | 6.97 | | 834.9 | | 1.31 | | 1,284 | | 2.01 | | 1,358 | 616 |
| 12 | 0.411 | 6.77 | 44 | 719.5 | 0.078 | 1.29 | 77 | 1,266 | 3.42 | 1.97 | 72 | 1,185 | 538 |
| 13 | | 6.98 | | 742.1 | | 1.33 | | 1,306 | | 2.04 | | 1,223 | 555 |
| 14 | | 3.65 | | 388.6 | | 0.70 | | 684 | | 1.07 | | 640.2 | 290 |
| 15 | 0.406 | 2.68 | 97 | 640.8 | 0.166 | 1.09 | 30 | 197.1 | 2.92 | 0.79 | 10 | 65.93 | 29.9 |
| 16 | | 5.56 | | 1,330 | | 2.27 | | 409.2 | | 1.64 | | 136.9 | 62.1 |
| 17 | | 6.73 | | 1,611 | | 2.75 | | 495.6 | | 1.99 | | 165.8 | 75.2 |
| 18 | | 6.72 | | 1,608 | | 2.75 | | 494.6 | | 1.98 | | 165.4 | 75.0 |
| 19 | 0.416 | 6.72 | 44 | 702.3 | 0.076 | 1.22 | 76 | 1,232 | 3.40 | 1.93 | 71 | 1,146 | 520 |
| 20 | | 6.98 | | 729.6 | | 1.27 | | 1,280 | | 2.01 | | 1,191 | 540 |
| 21 | | 3.54 | | 370.3 | | 0.64 | | 649.5 | | 1.02 | | 604.3 | 274 |
| 22 | 0.415 | 2.78 | 95 | 639.3 | 0.171 | 1.15 | 31 | 210.6 | 2.98 | 0.80 | 9 | 60.4 | 27.4 |
| 23 | | 5.78 | | 1,328 | | 2.38 | | 437.6 | | 1.67 | | 125.4 | 56.9 |
| 24 | | 6.72 | | 1,543 | | 2.77 | | 508.3 | | 1.94 | | 145.7 | 66.1 |
| 25 | | 6.71 | | 1,540 | | 2.76 | | 507.6 | | 1.94 | | 145.5 | 66.0 |
| 26 | 0.416 | 6.61 | 43 | 679.7 | 0.072 | 1.15 | 78 | 1,234 | 3.42 | 1.90 | 69 | 1,096 | 497 |
| 27 | | 6.98 | | 717.9 | | 1.21 | | 1,303 | | 2.01 | | 1,157 | 525 |
| 28 | | 3.58 | | 367.9 | | 0.62 | | 667.9 | | 1.03 | | 593.1 | 269 |
| 29 | 0.453 | 2.99 | 94 | 620.1 | 0.178 | 1.18 | 31 | 204.7 | 2.95 | 0.79 | 12 | 79.24 | 36 |
| 30 | | 6.43 | | 1,332 | | 2.53 | | 439.8 | | 1.70 | | 170.2 | 77.2 |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| Total | 3.80 | 170 | 613 | 27,109 | 1.072 | 46.8 | 509 | 23,503 | 28.6 | 48.5 | 425 | 20,067 | 9,101 |
| Sample Events | 9 | 30 | 9 | 30 | 9 | 30 | 9 | 30 | 9 | 30 | 9 | 30 | 30 |
| Daily Average | 0.422 | 5.67 | 68 | 904 | 0.119 | 1.56 | 57 | 783 | 3.17 | 1.62 | 47 | 669 | 303 |

Notes:
 $(X \text{ mg/L}) * (1 \text{ kg}/10^6 \text{ mg}) * (2.205 \text{ lbs}/\text{kg}) * (3.785 \text{ L}/\text{gal}) * (10^6 \text{ gal}/\text{Mgal}) * (Y \text{ Mgal}/\text{day}) = (X) * (Y) * (8.345) \text{ lbs}/\text{day}$
 $(X \text{ lbs}/\text{day}) * (1 \text{ kg}/2.205 \text{ lbs}) = (X) / (2.205) \text{ kg}/\text{day}$

**PTM Effluent at Lined Storage Pond
CENTRAL TREATMENT PLANT**

Month: Sep-16

| DATE | LEAD mg/L | ZINC mg/L | CADMIUM mg/L | pH s.u. | TSS mg/L |
|-------------|----------------------|----------------------|-------------------------|--------------------|---------------------|
| 09/08/16 | 0.004 | 10.0 | 1.30 | 6.77 | 0.6 |
| | | | | | |
| 09/22/16 | 0.008 | 10.7 | 1.36 | 6.83 | 1.2 |
| | | | | | |
| | | | | | |

**RINSATE AND TRIP BLANKS
CENTRAL TREATMENT PLANT**

Month: Sep-16

Rinsate and Trip Blank samples will be taken approximately every 20 QC events, or one each per month.

| LOCATION | DATE | SAMPLE | LEAD mg/L | ZINC mg/L | CADMIUM mg/L |
|---------------------------------|-------------|---------------|----------------------|----------------------|-------------------------|
| Rinsate & Trip Blank | | | | | |
| KT Discharge | | RB-09-05-16 | <0.01 | <0.004 | <0.002 |
| Trip Blank (D.I.water) | | TB-09-05-16 | <0.01 | <0.004 | <0.002 |

CENTRAL TREATMENT PLANT

MISCELLANEOUS FLOWS

Month : Sep-16

| Date | KT Flow Meter Reading |
|--------------|-----------------------|
| 8/31/2016 | 0 |
| 9/30/2016 | 49,796,420 |
| Total | 49,796,420 |

| Date | 006 Flow Meter Reading |
|--------------|------------------------|
| 8/31/2016 | 0 |
| 9/30/2016 | 48,536,000 |
| Total | 48,536,000 |

| Sweeny Pump Station Reading | | | | |
|---|---------|---------|---------|-----------|
| Date | #1 Pump | 620 gpm | #2 Pump | 500 gpm |
| 8/31/2016 | 170.0 | Hours | 785.0 | Hours |
| 9/30/2016 | 170.0 | Hours | 785.0 | Hours |
| Total Hours | 0.0 | Hours | 0.0 | Hours |
| Total Flow for 004/Sweeny For The Month = | | | | 0 Gallons |

| PTM Discharge Flow | |
|--------------------|------------|
| Date | Flow (gpm) |
| 09/08/16 | 6.0 |
| 09/22/16 | 6.0 |

| Date | Lined Storage Pond Water Level | | | |
|-----------|--------------------------------|-----|---------|--------|
| 8/31/2016 | 1,000,000 | gal | Elev. = | 2269.0 |
| 9/30/2016 | 1,000,000 | gal | Elev. = | 2269.0 |

KELLOGG TUNNEL ANNUAL DISCHARGE FLOWS 2000-2009

| | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|---------------|-------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Jan. | 61,000,000 | 61,677,510 | 54,606,100 | 53,066,890 | 52,223,080 | 53,150,000 | 56,050,900 | 56,281,000 | 53,465,820 | 50,936,960 |
| Feb. | 57,600,000 | 45,584,000 | 52,840,000 | 46,493,470 | 48,306,920 | 49,860,000 | 51,188,000 | 50,511,300 | 49,282,209 | 48,146,111 |
| March | 60,730,000 | 57,740,360 | 50,452,060 | 60,162,290 | 59,852,720 | 58,073,000 | 56,332,830 | 65,443,650 | 54,578,130 | 61,712,540 |
| April | 68,680,000 | 54,846,000 | 65,583,230 | 63,335,350 | 50,715,310 | 53,775,350 | 72,039,280 | 66,636,500 | 61,690,530 | 63,055,350 |
| May | 97,719,900 | 57,501,901 | 76,082,410 | 63,335,350 | 53,245,000 | 54,181,650 | 72,027,000 | 63,203,308 | 86,680,760 | 70,233,580 |
| June | 69,800,000 | 55,835,590 | 67,299,960 | 59,532,434 | 50,451,170 | 51,750,000 | 68,385,600 | 57,981,410 | 82,622,590 | 64,623,180 |
| July | 63,698,850 | 53,652,330 | 64,820,120 | 66,252,746 | 56,538,980 | 55,255,000 | 64,054,000 | 58,282,900 | 66,324,500 | 61,535,000 |
| Aug. | 66,707,120 | 45,289,000 | 58,212,940 | 62,074,750 | 52,002,140 | 49,970,000 | 64,621,000 | 55,335,900 | 65,168,620 | 56,446,670 |
| Sept. | 55,797,530 | 50,276,020 | 60,140,460 | 43,789,000 | 49,208,020 | 49,987,000 | 54,515,270 | 50,471,870 | 61,074,020 | 57,006,430 |
| Oct. | 60,424,720 | 50,660,840 | 54,485,871 | 52,869,290 | 59,601,690 | 52,807,000 | 57,610,030 | 50,086,330 | 58,666,300 | 55,830,000 |
| Nov. | 53,408,660 | 50,660,840 | 51,072,259 | 47,600,000 | 51,948,000 | 50,722,600 | 55,191,700 | 50,779,040 | 52,041,780 | 54,956,800 |
| Dec. | 56,414,870 | 53,464,780 | 56,034,000 | 56,413,080 | 56,770,000 | 54,904,400 | 60,486,900 | 53,716,210 | 55,727,260 | 54,542,700 |
| Totals | 771,981,650 | 637,189,171 | 711,629,410 | 674,924,650 | 640,863,030 | 634,436,000 | 732,502,510 | 678,729,418 | 747,322,519 | 699,025,321 |

KELLOGG TUNNEL ANNUAL DISCHARGE FLOWS 2010-2019

| | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
|---------------|-------------|-------------------|--------------------|--------------------|--------------------|--------------------|--------------------|----------|----------|----------|
| Jan. | 55,503,180 | 61,797,170 | 58,434,610 | 61,855,400 | 57,478,450 | 58,440,540 | 52,196,730 | | | |
| Feb. | 50,819,910 | 54,556,227 | 57,763,170 | 59,383,290 | 54,607,950 | 59,767,470 | 53,694,400 | | | |
| March | 54,691,420 | 61,373,630 | 67,236,650 | 66,264,780 | 65,396,350 | 64,468,230 | 63,967,920 | | | |
| April | 56,255,340 | 65,687,340 | 81,233,630 | 69,619,100 | 65,618,770 | 63,056,840 | 63,323,620 | | | |
| May | 58,825,640 | 84,365,390 | 86,826,340 | 71,496,380 | 80,598,590 | 61,898,200 | 58,147,240 | | | |
| June | 56,770,200 | 79,985,540 | 83,440,990 | 64,663,900 | 65,623,330 | 56,368,540 | 53,149,810 | | | |
| July | 56,727,510 | 79,346,330 | 74,315,690 | 62,844,790 | 63,425,030 | 55,655,000 | 56,521,710 | | | |
| Aug. | 56,239,370 | 70,377,570 | 68,986,900 | 58,459,380 | 61,486,270 | 55,316,100 | 53,293,430 | | | |
| Sept. | 54,109,980 | 60,404,280 | 62,270,300 | 58,097,500 | 56,279,590 | 53,890,000 | 49,796,420 | | | |
| Oct. | 55,480,200 | 62,403,480 | 59,991,850 | 58,325,780 | 60,659,850 | 52,082,800 | | | | |
| Nov. | 54,856,880 | 58,430,700 | 57,184,220 | 56,215,000 | 55,065,100 | 49,812,540 | | | | |
| Dec. | 54,607,330 | 58,617,700 | 61,750,390 | 56,932,530 | 59,770,540 | 51,521,900 | | | | |
| Totals | 664,886,960 | 797,345,357 | 819,434,740 | 744,157,830 | 746,009,820 | 682,278,160 | 504,091,280 | 0 | 0 | 0 |

 Yellow indicates record monthly flow as well as record annual flow

KELLOGG TUNNEL ZINC DATA

| Month | Concentration (mg/L) | | | | | | | | | | | | |
|-------------------------------------|----------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | <u>2004</u> | <u>2005</u> | <u>2006</u> | <u>2007</u> | <u>2008</u> | <u>2009</u> | <u>2010</u> | <u>2011</u> | <u>2012</u> | <u>2013</u> | <u>2014</u> | <u>2015</u> | <u>2016</u> |
| Jan. | | 86 | 81 | 79 | 63 | 70 | 61 | 72 | 57 | 68 | 41 | 46 | 50 |
| Feb. | | 86 | 91 | 96 | 55 | 72 | 57 | 95 | 58 | 68 | 41 | 68 | 52 |
| March | | 94 | 116 | 86 | 65 | 68 | 53 | 86 | 58 | 69 | 58 | 81 | 63 |
| April | | 98 | 121 | 140 | 85 | 80 | 50 | 137 | 176 | 86 | 107 | 92 | 115 |
| May | | 105 | 231 | 179 | 318 | 136 | 57 | 377 | 215 | 150 | 177 | 87 | 138 |
| June | | 107 | 182 | 118 | 271 | 143 | 68 | 347 | 164 | 106 | 131 | 78 | 108 |
| July | | 90 | 144 | 111 | 198 | 117 | 75 | 181 | 136 | 87 | 87 | 75 | 81 |
| Aug. | | 87 | 112 | 92 | 132 | 94 | 79 | 130 | 110 | 86 | 76 | 66 | 76 |
| Sept. | | 84 | 107 | 80 | 107 | 76 | 81 | 132 | 107 | 75 | 66 | 63 | 68 |
| Oct. | 59 | 81 | 100 | 88 | 99 | 75 | 70 | 86 | 70 | 67 | 63 | 54 | |
| Nov. | 66 | 79 | 88 | 88 | 104 | 63 | 57 | 95 | 71 | 70 | 55 | 44 | |
| Dec. | 67 | 62 | 78 | 65 | 76 | 59 | 61 | 88 | 69 | 54 | 49 | 55 | |
| average | 64 | 88 | 121 | 102 | 131 | 88 | 64 | 152 | 108 | 82 | 79 | 67 | |
| lime usage (tons/day) | | 2.59 | 3.23 | 2.76 | 4.78 | 3.24 | 2.16 | 4.31 | 3.93 | 2.46 | 2.70 | 1.99 | |
| Zinc Conc. Increase/Decrease | | | 37% | -16% | 29% | -33% | -27% | 138% | -29% | -24% | -4% | -15% | |
| Lime Usage Increase/Decrease | | | 25% | -15% | 73% | -32% | -33% | 100% | -9% | -37% | 10% | -26% | |

| Bunker Hill Superfund Site | | | | | | | |
|--------------------------------|----------|-----------|---------|--------|-------|-----------|-------------------|
| Kellogg, Idaho | | | | | | | |
| Central Treatment Plant Review | | | | | | | |
| Month: Sep-16 | | | | | | | |
| SAMPLE | DATE | PARAMETER | VALUE | QC/dup | UNITS | PRECISION | MATRIX SPIKE DATA |
| LOCATION | | | RESULTS | | | % RPD | % RECOVERY |
| Performance | 09/01/16 | Cadmium | 0.051 | 0.050 | mg/L | 2.4% | |
| Evaluation | | Lead | 0.328 | 0.300 | mg/L | 8.9% | |
| Sample | | Zinc | 0.890 | 0.730 | mg/L | 19.8% | |
| (CTPXX-09-01-16) | | | | | mg/L | | |
| CTPXX-09-01-16 | 09/01/16 | Cadmium | 0.051 | 0.051 | mg/L | -0.2% | 92% |
| | | Lead | 0.328 | 0.329 | mg/L | -0.3% | 93% |
| Lab Duplicate | | Manganese | 0.008 | 0.005 | mg/L | 54.5% | 97% |
| | | Zinc | 0.890 | 0.887 | mg/L | 0.3% | 90% |
| 006/CTP Outfall | 09/02/16 | Cadmium | 0.004 | 0.004 | mg/L | 4.7% | 99% |
| | | Lead | 0.004 | 0.004 | mg/L | 0.0% | 96% |
| Lab Duplicate | | Manganese | 23.3 | 23.3 | mg/L | 0.0% | 117% |
| | | Zinc | 0.225 | 0.225 | mg/L | 0.0% | 94% |
| | | pH | 7.16 | 7.10 | s.u. | 0.8% | |
| | | TSS | 0.6 | 0.6 | mg/L | 0.0% | |
| 006/CTP Outfall | 09/05/16 | Cadmium | 0.003 | 0.003 | mg/L | 7.1% | 98% |
| | | Lead | 0.004 | 0.004 | mg/L | 0.0% | 93% |
| Lab Duplicate | | Manganese | 7.92 | 7.85 | mg/L | 0.9% | 100% |
| | | Zinc | 0.176 | 0.175 | mg/L | 0.6% | 93% |
| | | pH | 7.16 | 7.13 | s.u. | 0.4% | |
| | | TSS | 1.0 | 1.0 | mg/L | 0.0% | |
| Kellogg Tunnel | 09/05/16 | Cadmium | 0.083 | 0.084 | mg/L | -1.0% | |
| | | Lead | 0.448 | 0.452 | mg/L | -0.9% | |
| QC Sample | | Manganese | 79.3 | 83.1 | mg/L | -4.7% | |
| | | Zinc | 52.8 | 54.2 | mg/L | -2.6% | |
| | | pH | 3.28 | 3.30 | s.u. | -0.6% | |
| | | TSS | 82.0 | 82.0 | mg/L | 0.0% | |
| TB-09-05-16 | 09/05/16 | Cadmium | 0.009 | 0.009 | mg/L | 0.0% | 100% |
| | | Lead | 0.004 | 0.004 | mg/L | 0.0% | 101% |
| Lab Duplicate | | Manganese | 0.004 | 0.002 | mg/L | 52.3% | 104% |
| | | Zinc | 0.003 | 0.003 | mg/L | 0.0% | 100% |
| | | pH | | | s.u. | | |
| | | TSS | | | mg/L | | |
| 006/CTP Outfall | 09/07/16 | Cadmium | 0.004 | 0.004 | mg/L | -2.8% | 106% |
| | | Lead | 0.004 | 0.004 | mg/L | 0.0% | 100% |
| Lab Duplicate | | Manganese | 13.5 | 13.5 | mg/L | 0.0% | 97% |
| | | Zinc | 0.183 | 0.186 | mg/L | -1.6% | 100% |
| | | pH | 6.68 | 6.59 | s.u. | 1.4% | |
| | | TSS | 0.6 | 0.6 | mg/L | 0.0% | |
| Performance | 09/08/16 | Cadmium | 0.054 | 0.050 | mg/L | 6.9% | |
| Evaluation | | Lead | 0.330 | 0.300 | mg/L | 9.5% | |
| Sample | | Zinc | 0.931 | 0.730 | mg/L | 24.2% | |
| (CTPXX-09-08-16) | | | | | mg/L | | |
| CTPXX-09-08-16 | 09/08/16 | Cadmium | 0.054 | 0.053 | mg/L | 0.6% | 94% |
| | | Lead | 0.330 | 0.329 | mg/L | 0.3% | 93% |
| Lab Duplicate | | Manganese | 0.006 | 0.006 | mg/L | 0.0% | 96% |

| SAMPLE | DATE | PARAMETER | VALUE | QC/dup | UNITS | PRECISION | MATRIX SPIKE DATA |
|------------------|----------|-----------|---------|--------|-------|-----------|-------------------|
| LOCATION | | | RESULTS | | | % RPD | % RECOVERY |
| | | Zinc | 0.931 | 0.928 | mg/L | 0.3% | 90% |
| 006/CTP Outfall | 09/09/16 | Cadmium | 0.003 | 0.003 | mg/L | 3.0% | 96% |
| | | Lead | 0.004 | 0.004 | mg/L | 0.0% | 89% |
| Lab Duplicate | | Manganese | 20.9 | 20.6 | mg/L | 1.4% | 82% |
| | | Zinc | 0.167 | 0.163 | mg/L | 2.4% | 89% |
| | | pH | 7.10 | 7.05 | s.u. | 0.7% | |
| | | TSS | 1.2 | 1.2 | mg/L | 0.0% | |
| 006/CTP Outfall | 09/12/16 | Cadmium | 0.003 | 0.003 | mg/L | -3.4% | 100% |
| | | Lead | 0.004 | 0.004 | mg/L | 0.0% | 93% |
| Lab Duplicate | | Manganese | 21.5 | 21.6 | mg/L | -0.5% | |
| | | Zinc | 0.150 | 0.150 | mg/L | 0.0% | 94% |
| | | pH | 7.15 | 7.11 | s.u. | 0.6% | |
| | | TSS | 1.0 | 1.0 | mg/L | 0.0% | |
| Kellogg Tunnel | 09/12/16 | Cadmium | 0.078 | 0.078 | mg/L | 0.6% | |
| | | Lead | 0.411 | 0.417 | mg/L | -1.4% | |
| QC Sample | | Manganese | 76.9 | 76.6 | mg/L | 0.4% | |
| | | Zinc | 43.7 | 44.8 | mg/L | -2.5% | |
| | | pH | 3.42 | 3.43 | s.u. | -0.3% | |
| | | TSS | 72.0 | 70.0 | mg/L | 2.8% | |
| KT QC Sample | 09/12/16 | Cadmium | 0.078 | 0.078 | mg/L | 0.1% | 99% |
| | | Lead | 0.417 | 0.418 | mg/L | -0.2% | 91% |
| Lab Duplicate | | Manganese | 76.6 | 76.6 | mg/L | 0.0% | |
| | | Zinc | 44.8 | 44.7 | mg/L | 0.2% | |
| 006/CTP Outfall | 09/14/16 | Cadmium | 0.003 | 0.003 | mg/L | 7.1% | 97% |
| | | Lead | 0.004 | 0.004 | mg/L | 0.0% | 90% |
| Lab Duplicate | | Manganese | 22.1 | 21.5 | mg/L | 2.8% | |
| | | Zinc | 0.151 | 0.150 | mg/L | 0.7% | 91% |
| | | pH | 7.08 | 6.98 | s.u. | 1.4% | |
| | | TSS | 1.4 | 1.4 | mg/L | 0.0% | |
| Performance | 09/15/16 | Cadmium | 0.053 | 0.050 | mg/L | 4.9% | |
| Evaluation | | Lead | 0.322 | 0.300 | mg/L | 7.1% | |
| Sample | | Zinc | 0.906 | 0.730 | mg/L | 21.5% | |
| (CTPXX-09-15-16) | | | | | mg/L | | |
| CTPXX-09-15-16 | 09/15/16 | Cadmium | 0.053 | 0.052 | mg/L | 1.3% | 94% |
| | | Lead | 0.322 | 0.316 | mg/L | 1.9% | 93% |
| Lab Duplicate | | Manganese | 0.002 | 0.003 | mg/L | -11.8% | 99% |
| | | Zinc | 0.906 | 0.895 | mg/L | 1.2% | 92% |
| 006/CTP Outfall | 09/16/16 | Cadmium | 0.003 | 0.002 | mg/L | 16.7% | 98% |
| | | Lead | 0.004 | 0.004 | mg/L | 0.0% | 92% |
| Lab Duplicate | | Manganese | 12.0 | 12.1 | mg/L | -0.8% | 99% |
| | | Zinc | 0.155 | 0.156 | mg/L | -0.6% | 93% |
| | | pH | 7.08 | 6.96 | s.u. | 1.7% | |
| | | TSS | 0.6 | 0.6 | mg/L | 0.0% | |
| 006/CTP Outfall | 09/19/16 | Cadmium | 0.003 | 0.003 | mg/L | 0.0% | 99% |
| | | Lead | 0.004 | 0.004 | mg/L | 0.0% | 93% |
| Lab Duplicate | | Manganese | 13.9 | 13.8 | mg/L | 0.7% | |
| | | Zinc | 0.117 | 0.115 | mg/L | 1.7% | 93% |
| | | pH | 7.19 | 7.14 | s.u. | 0.7% | |
| | | TSS | 1.6 | 1.6 | mg/L | 0.0% | |
| Kellogg Tunnel | 09/19/16 | Cadmium | 0.076 | 0.074 | mg/L | 2.1% | 100% |

| SAMPLE | DATE | PARAMETER | VALUE | QC/dup | UNITS | PRECISION | MATRIX SPIKE DATA |
|------------------|----------|-----------|---------|--------|-------|-----------|-------------------|
| LOCATION | | | RESULTS | | | % RPD | % RECOVERY |
| | | Lead | 0.416 | 0.405 | mg/L | 2.7% | 93% |
| Lab Duplicate | | Manganese | 76.3 | 74.8 | mg/L | 2.0% | |
| | | Zinc | 43.5 | 42.7 | mg/L | 1.9% | |
| | | pH | | | s.u. | | |
| | | TSS | | | mg/L | | |
| 006/CTP Outfall | 09/21/16 | Cadmium | 0.003 | 0.003 | mg/L | 7.7% | 99% |
| | | Lead | 0.004 | 0.004 | mg/L | 0.0% | 92% |
| Lab Duplicate | | Manganese | 18.6 | 18.8 | mg/L | -1.1% | 114% |
| | | Zinc | 0.135 | 0.133 | mg/L | 1.5% | 92% |
| | | pH | 7.05 | 7.02 | s.u. | 0.4% | |
| | | TSS | 1.4 | 1.4 | mg/L | 0.0% | |
| PTM Discharge | 09/22/16 | Cadmium | 1.38 | 1.41 | mg/L | -2.2% | |
| | | Lead | 0.004 | 0.004 | mg/L | 0.0% | |
| QC Sample | | Zinc | 10.5 | 10.9 | mg/L | -3.7% | |
| | | pH | 6.69 | 6.58 | s.u. | 1.7% | |
| | | TSS | 0.6 | 0.6 | mg/L | 0.0% | |
| Performance | 09/22/16 | Cadmium | 0.055 | 0.050 | mg/L | 9.7% | |
| Evaluation | | Lead | 0.333 | 0.300 | mg/L | 10.4% | |
| Sample | | Zinc | 0.954 | 0.730 | mg/L | 26.6% | |
| (CTPXX-09-22-16) | | | | | mg/L | | |
| CTPXX-09-22-16 | 09/22/16 | Cadmium | 0.055 | 0.054 | mg/L | 2.0% | 100% |
| | | Lead | 0.333 | 0.329 | mg/L | 1.2% | 100% |
| Lab Duplicate | | Manganese | 0.002 | 0.002 | mg/L | 0.0% | 105% |
| | | Zinc | 0.954 | 0.944 | mg/L | 1.1% | 101% |
| 006/CTP Outfall | 09/23/16 | Cadmium | 0.002 | 0.003 | mg/L | -15.4% | 103% |
| | | Lead | 0.004 | 0.004 | mg/L | 0.0% | 95% |
| Lab Duplicate | | Manganese | 10.0 | 10.0 | mg/L | 0.0% | 106% |
| | | Zinc | 0.193 | 0.191 | mg/L | 1.0% | 96% |
| | | pH | 6.58 | 6.76 | s.u. | -2.7% | |
| | | TSS | 1.0 | 1.0 | mg/L | 0.0% | |
| 006/CTP Outfall | 09/26/16 | Cadmium | 0.002 | 0.002 | mg/L | 0.0% | 105% |
| | | Lead | 0.004 | 0.004 | mg/L | 0.0% | 97% |
| Lab Duplicate | | Manganese | 16.0 | 16.0 | mg/L | 0.0% | |
| | | Zinc | 0.125 | 0.127 | mg/L | -1.6% | 97% |
| | | pH | 7.07 | 7.10 | s.u. | -0.4% | |
| | | TSS | 0.6 | 0.8 | mg/L | -28.6% | |
| Kellogg Tunnel | 09/26/16 | Cadmium | 0.072 | 0.075 | mg/L | -3.3% | 107% |
| | | Lead | 0.416 | 0.432 | mg/L | -3.8% | 98% |
| Lab Duplicate | | Manganese | 77.7 | 80.8 | mg/L | -3.9% | |
| | | Zinc | 42.8 | 44.5 | mg/L | -3.9% | |
| | | pH | | | s.u. | | |
| | | TSS | | | mg/L | | |
| 006/CTP Outfall | 09/28/16 | Cadmium | 0.003 | 0.002 | mg/L | 11.8% | |
| | | Lead | 0.004 | 0.004 | mg/L | 0.0% | |
| QC Sample | | Manganese | 20.3 | 20.0 | mg/L | 1.5% | |
| | | Zinc | 0.145 | 0.141 | mg/L | 2.8% | |
| | | pH | 7.12 | 6.84 | s.u. | 4.0% | |
| | | TSS | 0.6 | 0.6 | mg/L | 0.0% | |
| 006/CTP Outfall | 09/28/16 | Cadmium | 0.003 | 0.003 | mg/L | 3.8% | 102% |
| | | Lead | 0.004 | 0.004 | mg/L | 0.0% | 95% |

| SAMPLE | DATE | PARAMETER | VALUE | QC/dup | UNITS | PRECISION | MATRIX SPIKE DATA |
|---|----------------|----------------------|--------------------------------------|---------------------|-------|-----------|-------------------|
| LOCATION | | | RESULTS | | | % RPD | % RECOVERY |
| Lab Duplicate | | Manganese | 20.3 | 19.9 | mg/L | 2.0% | |
| | | Zinc | 0.145 | 0.145 | mg/L | 0.0% | 96% |
| | | pH | 7.12 | 7.05 | s.u. | 1.0% | |
| | | TSS | 0.6 | 0.6 | mg/L | 0.0% | |
| Performance Evaluation Sample | 09/29/16 | Cadmium | 0.059 | 0.050 | mg/L | 15.8% | |
| | | Lead | 0.354 | 0.300 | mg/L | 16.5% | |
| | | Zinc | 1.00 | 0.730 | mg/L | 31.2% | |
| (CTPXX-09-29-16) | | | | | mg/L | | |
| CTPXX-09-29-16 | 09/29/16 | Cadmium | 0.059 | 0.059 | mg/L | 0.0% | 106% |
| | | Lead | 0.354 | 0.351 | mg/L | 0.9% | 106% |
| Lab Duplicate | | Manganese | 0.002 | 0.002 | mg/L | 0.0% | 106% |
| | | Zinc | 1.00 | 1.00 | mg/L | 0.0% | 102% |
| 006/CTP Outfall | 09/30/16 | Cadmium | 0.003 | 0.003 | mg/L | 7.4% | 102% |
| | | Lead | 0.004 | 0.004 | mg/L | 0.0% | 100% |
| Lab Duplicate | | Manganese | 15.6 | 15.5 | mg/L | 0.6% | |
| | | Zinc | 0.159 | 0.155 | mg/L | 2.5% | 97% |
| | | pH | 7.18 | 7.14 | s.u. | 0.6% | |
| | | TSS | 0.8 | 0.8 | mg/L | 0.0% | |
| <i>September 2016, Completeness</i> | | Cadmium | 31 | Valid | Total | 31 | |
| | | Lead | 31 | Valid | Total | 31 | |
| | | Manganese | 23 | Valid | Total | 23 | |
| | | Zinc | 31 | Valid | Total | 31 | |
| | | pH | 18 | Valid | Total | 18 | |
| | | TSS | 18 | Valid | Total | 18 | |
| Monthly Performance Evaluation | | | | | | | |
| Acceptable Quantitation Range | | | | | | | |
| | Analyte | Concentration | Acceptable Quantitation Range | | | | |
| | | (mg/L) | (mg/L) | | | | |
| | Cadmium | 0.050 | 0.0458-0.0573 | | | | |
| | Lead | 0.300 | 0.2588-0.3525 | | | | |
| | Zinc | 0.730 | 0.6296-0.8395 | | | | |
| Note: The PE quantitation range (listed above) from our PE sample source is less than required in the contract. The contract limits (listed below) have been utilized for this evaluation. | | | | | | | |
| Note: Performance evaluation samples have been given the designation "CTPXX" for purposes of blind submission to the analytical laboratory. | | | | | | | |
| Analytical Requirements | | | | | | | |
| | | Quantitation | Accuracy | Completeness | | | |
| | Cadmium | ≤ 0.025 mg/L | 80-120% | 90% | | | |
| | Lead | ≤ 0.15 mg/L | 80-120% | 90% | | | |
| | Manganese | ≤ 0.025 mg/L | 80-120% | 90% | | | |
| | Zinc | ≤ 0.30 mg/L | 80-120% | 90% | | | |
| | pH | ≤ 0.1 pH unit | 90-110% | 90% | | | |
| | TSS | ≤ 15 mg/L | 75-125% | 90% | | | |

Bunker Hill Superfund Site
Kellogg, Idaho
Central Treatment Plant Review
Month: Sep-16

| SAMPLE | DATE | PARAMETER | CONCENTRATION (mg/L) | | | PRECISION | COMMENTS |
|-----------------|----------|-----------|----------------------|-----------|--------|-----------|-----------------------------|
| | | | SPIKE | DUPLICATE | SPIKE | | |
| LOCATION | | | ADDED | RESULT | RESULT | % RPD | |
| PE Sample | 09/01/16 | Cadmium | 1.00 | 0.972 | 0.975 | 0.4% | |
| MS/MSD | | Lead | 1.00 | 1.25 | 1.25 | 0.0% | |
| CTPXX-09-01-16 | | Manganese | 1.00 | 0.971 | 0.978 | 0.8% | Sample conc. >> spike level |
| | | Zinc | 1.00 | 1.80 | 1.79 | 0.3% | |
| 006/CTP Outfall | 09/02/16 | Cadmium | 1.00 | 1.00 | 0.996 | 0.5% | |
| MS/MSD | | Lead | 1.00 | 0.962 | 0.957 | 0.5% | |
| | | Manganese | 1.00 | 24.0 | 24.4 | 1.8% | Sample conc. >> spike level |
| | | Zinc | 1.00 | 1.18 | 1.16 | 0.9% | |
| 006/CTP Outfall | 09/05/16 | Cadmium | 1.00 | 0.965 | 0.979 | 1.5% | |
| MS/MSD | | Lead | 1.00 | 0.916 | 0.932 | 1.7% | |
| | | Manganese | 1.00 | 8.79 | 8.92 | 1.4% | Sample conc. >> spike level |
| | | Zinc | 1.00 | 1.10 | 1.11 | 1.3% | |
| TB-09-05-16 | 09/05/16 | Cadmium | 1.00 | 0.997 | 1.000 | 0.7% | |
| MS/MSD | | Lead | 1.00 | 1.01 | 1.00 | 0.5% | |
| | | Manganese | 1.00 | 1.05 | 1.00 | 0.2% | Sample conc. >> spike level |
| | | Zinc | 1.00 | 0.999 | 1.00 | 0.7% | |
| 006/CTP Outfall | 09/07/16 | Cadmium | 1.00 | 1.07 | 1.06 | 1.5% | |
| MS/MSD | | Lead | 1.00 | 1.02 | 1.00 | 1.3% | |
| | | Manganese | 1.00 | 14.4 | 14.5 | 0.7% | Sample conc. >> spike level |
| | | Zinc | 1.00 | 1.21 | 1.19 | 1.8% | |
| PE Sample | 09/08/16 | Cadmium | 1.00 | 0.989 | 0.994 | 0.5% | |
| MS/MSD | | Lead | 1.00 | 1.25 | 1.26 | 1.0% | |
| CTPXX-09-08-16 | | Manganese | 1.00 | 0.973 | 0.964 | 0.8% | Sample conc. >> spike level |
| | | Zinc | 1.00 | 1.83 | 1.85 | 1.2% | |
| 006/CTP Outfall | 09/09/16 | Cadmium | 1.00 | 0.963 | 0.958 | 0.5% | |
| MS/MSD | | Lead | 1.00 | 0.890 | 0.893 | 0.2% | |
| | | Manganese | 1.00 | 21.7 | 21.7 | 0.1% | Sample conc. >> spike level |
| | | Zinc | 1.00 | 1.06 | 1.06 | 0.0% | |
| 006/CTP Outfall | 09/12/16 | Cadmium | 1.00 | 0.991 | 1.00 | 0.9% | |
| MS/MSD | | Lead | 1.00 | 0.927 | 0.928 | 0.2% | |
| | | Manganese | 1.00 | 22.5 | 22.8 | 1.4% | Sample conc. >> spike level |
| | | Zinc | 1.00 | 1.09 | 1.09 | 0.0% | |
| KT QC-09-12-16 | 09/12/16 | Cadmium | 1.00 | 1.06 | 1.07 | 0.2% | |
| MS/MSD | | Lead | 1.00 | 1.32 | 1.33 | 0.6% | |
| | | Manganese | 1.00 | 76.8 | 76.0 | 1.1% | Sample conc. >> spike level |
| | | Zinc | 1.00 | 44.7 | 44.6 | 0.3% | |
| 006/CTP Outfall | 09/14/16 | Cadmium | 1.00 | 0.967 | 0.977 | 1.0% | |
| MS/MSD | | Lead | 1.00 | 0.892 | 0.901 | 1.0% | |
| | | Manganese | 1.00 | 22.8 | 22.6 | 1.0% | Sample conc. >> spike level |
| | | Zinc | 1.00 | 1.05 | 1.06 | 0.7% | |
| PE Sample | 09/15/16 | Cadmium | 1.00 | 1.00 | 0.996 | 0.4% | |
| MS/MSD | | Lead | 1.00 | 1.26 | 1.25 | 0.6% | |
| CTPXX-09-15-16 | | Manganese | 1.00 | 0.998 | 0.992 | 0.5% | Sample conc. >> spike level |

| | | | | | | | |
|-----------------|----------|-----------|------|-------|-------|------|-----------------------------|
| | | Zinc | 1.00 | 1.83 | 1.82 | 0.6% | |
| 006/CTP Outfall | 09/16/16 | Cadmium | 1.00 | 0.975 | 0.978 | 0.4% | |
| MS/MSD | | Lead | 1.00 | 0.910 | 0.916 | 0.7% | |
| | | Manganese | 1.00 | 13.0 | 13.0 | 0.1% | Sample conc. >> spike level |
| | | Zinc | 1.00 | 1.07 | 1.08 | 1.0% | |
| 006/CTP Outfall | 09/19/16 | Cadmium | 1.00 | 0.993 | 0.990 | 0.2% | |
| MS/MSD | | Lead | 1.00 | 0.920 | 0.925 | 0.5% | |
| | | Manganese | 1.00 | 14.8 | 14.6 | 1.7% | Sample conc. >> spike level |
| | | Zinc | 1.00 | 1.04 | 1.05 | 0.3% | |
| Kellogg Tunnel | 09/19/16 | Cadmium | 1.00 | 1.08 | 1.07 | 0.4% | |
| MS/MSD | | Lead | 1.00 | 1.34 | 1.34 | 0.1% | |
| | | Manganese | 1.00 | 75.8 | 76.1 | 0.4% | Sample conc. >> spike level |
| | | Zinc | 1.00 | 43.5 | 43.9 | 0.8% | |
| 006/CTP Outfall | 09/21/16 | Cadmium | 1.00 | 0.994 | 0.993 | 0.1% | |
| MS/MSD | | Lead | 1.00 | 0.921 | 0.917 | 0.4% | |
| | | Manganese | 1.00 | 19.3 | 19.7 | 2.1% | Sample conc. >> spike level |
| | | Zinc | 1.00 | 1.05 | 1.05 | 0.0% | |
| PE Sample | 09/22/16 | Cadmium | 1.00 | 1.05 | 1.06 | 1.0% | |
| MS/MSD | | Lead | 1.00 | 1.31 | 1.33 | 1.1% | |
| CTPXX-09-22-16 | | Manganese | 1.00 | 1.04 | 1.05 | 0.3% | Sample conc. >> spike level |
| | | Zinc | 1.00 | 1.93 | 1.96 | 1.4% | |
| 006/CTP Outfall | 09/23/16 | Cadmium | 1.00 | 1.04 | 1.03 | 1.1% | |
| MS/MSD | | Lead | 1.00 | 0.969 | 0.952 | 1.8% | |
| | | Manganese | 1.00 | 11.1 | 11.1 | 0.3% | Sample conc. >> spike level |
| | | Zinc | 1.00 | 1.17 | 1.15 | 1.6% | |
| 006/CTP Outfall | 09/26/16 | Cadmium | 1.00 | 1.05 | 1.05 | 0.6% | |
| MS/MSD | | Lead | 1.00 | 0.966 | 0.966 | 0.0% | |
| | | Manganese | 1.00 | 16.4 | 16.6 | 1.1% | Sample conc. >> spike level |
| | | Zinc | 1.00 | 1.10 | 1.10 | 0.0% | |
| Kellogg Tunnel | 09/26/16 | Cadmium | 1.00 | 1.13 | 1.14 | 0.9% | |
| MS/MSD | | Lead | 1.00 | 1.40 | 1.40 | 0.2% | |
| | | Manganese | 1.00 | 80.3 | 80.7 | 0.5% | Sample conc. >> spike level |
| | | Zinc | 1.00 | 44.3 | 44.4 | 0.2% | |
| 006/CTP Outfall | 09/28/16 | Cadmium | 1.00 | 1.05 | 1.03 | 1.7% | |
| MS/MSD | | Lead | 1.00 | 0.960 | 0.950 | 1.1% | |
| | | Manganese | 1.00 | 21.2 | 21.0 | 0.7% | Sample conc. >> spike level |
| | | Zinc | 1.00 | 1.12 | 1.11 | 1.0% | |
| Kellogg Tunnel | 09/29/16 | Cadmium | 1.00 | 1.10 | 1.12 | 1.3% | |
| MS/MSD | | Lead | 1.00 | 1.40 | 1.42 | 1.5% | |
| | | Manganese | 1.00 | 1.05 | 1.06 | 1.2% | Sample conc. >> spike level |
| | | Zinc | 1.00 | 2.00 | 2.02 | 1.5% | |
| 006/CTP Outfall | 09/30/16 | Cadmium | 1.00 | 1.04 | 1.03 | 0.9% | |
| MS/MSD | | Lead | 1.00 | 1.01 | 1.00 | 1.1% | |
| | | Manganese | 1.00 | 16.6 | 17.0 | 2.5% | Sample conc. >> spike level |
| | | Zinc | 1.00 | 1.13 | 1.12 | 0.7% | |

CTP Mine Water Line Open Channel Inspection Form

**Note: This form should be utilized weekly during the regular channel cleanout.
Results will be include with the Daily Quality Control Report and monthly DMR.**

Date: September 01, 2016 Inspected By: Gary Coast, Steve Brunner'

| Item Inspected | Condition | Comments |
|-----------------------------------|--------------------|---|
| Channel Sections and Joints | Good / Poor | <u>Check for cracks</u> <u>Ok</u> |
| Channel Inlet Connection @ KT | Good / Poor | <u>Check for cracks</u> <u>Ok</u> |
| Channel Outlet/Pipeline Inlet | Good / Poor | <u>Check for cracks</u> <u>Ok</u> |
| Channel Bottom (during low flows) | Good / Poor | <u>Ok</u> |
| Bottom Joints (during low flows) | Good / Poor | <u>Ok</u> |
| Trash Rack Assembly Rail Units | Good / Poor | <u>Check for corrosion and bolt tightness</u> <u>Ok</u> |
| Trash Racks | Good / Poor | <u>Removed debris from trash racks</u> |
| Parshall Flume | Good / Poor | <u>Check fiberglass and joint connections</u> <u>Ok</u> |

General Comments:

Bunker mine has no pumps operating at this time.

The Kellogg Tunnel flow at this time is 0.92 mgd (639 gpm), pH at this time is 3.05

The concrete flume walls are beginning to deteriorate approximately 6" up from the flume bottom.

The submerged area of the concrete is pitting and is now approximately 1/2" indented.

Alternate hand held staff gauge was used to verify flume staff gauge and flow meter readings.

Ultrasonic flow meter calibration was correct, no adjustments were needed.

CTP Mine Water Line Open Channel Inspection Form

**Note: This form should be utilized weekly during the regular channel cleanout.
Results will be include with the Daily Quality Control Report and monthly DMR.**

Date: September 08, 2016 Inspected By: Gary Coast, Steve Brunner

| Item Inspected | Condition | Comments |
|-----------------------------------|--------------------|---|
| Channel Sections and Joints | Good / Poor | <u>Check for cracks</u> <u>Ok</u> |
| Channel Inlet Connection @ KT | Good / Poor | <u>Check for cracks</u> <u>Ok</u> |
| Channel Outlet/Pipeline Inlet | Good / Poor | <u>Check for cracks</u> <u>Ok</u> |
| Channel Bottom (during low flows) | Good / Poor | <u>Ok</u> |
| Bottom Joints (during low flows) | Good / Poor | <u>Ok</u> |
| Trash Rack Assembly Rail Units | Good / Poor | <u>Check for corrosion and bolt tightness</u> <u>Ok</u> |
| Trash Racks | Good / Poor | <u>Removed debris from trash racks</u> |
| Parshall Flume | Good / Poor | <u>Check fiberglass and joint connections</u> <u>Ok</u> |

General Comments:

The Kellogg Tunnel flow at this time is 2.03 mgd (1410 gpm), pH at this time is 3.09.

The concrete flume walls are beginning to deteriorate approximately 6" up from the flume bottom.

The submerged area of the concrete is pitting and is now approximately 1/2" indented.

Alternate hand held staff gauge was used to verify flume staff gauge and flow meter readings.

Ultrasonic flow meter calibration was correct, no adjustments were needed.

Operators collected no sediment from the flume area.

CTP Mine Water Line Open Channel Inspection Form

**Note: This form should be utilized weekly during the regular channel cleanout.
Results will be include with the Daily Quality Control Report and monthly DMR.**

Date: September 15, 2016 Inspected By: Gary Coast, Steve Brunner

| Item Inspected | Condition | Comments |
|-----------------------------------|--------------------|---|
| Channel Sections and Joints | Good / Poor | <u>Check for cracks</u> <u>Ok</u> |
| Channel Inlet Connection @ KT | Good / Poor | <u>Check for cracks</u> <u>Ok</u> |
| Channel Outlet/Pipeline Inlet | Good / Poor | <u>Check for cracks</u> <u>Ok</u> |
| Channel Bottom (during low flows) | Good / Poor | <u>Ok</u> |
| Bottom Joints (during low flows) | Good / Poor | <u>Ok</u> |
| Trash Rack Assembly Rail Units | Good / Poor | <u>Check for corrosion and bolt tightness</u> <u>Ok</u> |
| Trash Racks | Good / Poor | <u>Removed debris from trash racks</u> |
| Parshall Flume | Good / Poor | <u>Check fiberglass and joint connections</u> <u>Ok</u> |

General Comments:

The Kellogg Tunnel flow at this time is 0.88 mgd (610 gpm), pH at this time is 3.18.

The concrete flume walls are beginning to deteriorate approximately 6" up from the flume bottom.

The submerged area of the concrete is pitting and is now approximately 1/2" indented.

Alternate hand held staff gauge was used to verify flume staff gauge and flow meter readings.

Ultrasonic flow meter calibration was correct, no adjustments were needed.

Operators collected approximately 1 gallon of sediment from the flume area.

Sediment collected from the flume area was disposed of at the CIA sludge pond.

CTP Mine Water Line Open Channel Inspection Form

**Note: This form should be utilized weekly during the regular channel cleanout.
Results will be include with the Daily Quality Control Report and monthly DMR.**

Date: September 22, 2016 Inspected By: Gary Coast, Steve Brunner

| Item Inspected | Condition | Comments |
|-----------------------------------|--------------------|---|
| Channel Sections and Joints | Good / Poor | <u>Check for cracks</u> <u>Ok</u> |
| Channel Inlet Connection @ KT | Good / Poor | <u>Check for cracks</u> <u>Ok</u> |
| Channel Outlet/Pipeline Inlet | Good / Poor | <u>Check for cracks</u> <u>Ok</u> |
| Channel Bottom (during low flows) | Good / Poor | <u>Ok</u> |
| Bottom Joints (during low flows) | Good / Poor | <u>Ok</u> |
| Trash Rack Assembly Rail Units | Good / Poor | <u>Check for corrosion and bolt tightness</u> <u>Ok</u> |
| Trash Racks | Good / Poor | <u>Removed debris from trash racks</u> |
| Parshall Flume | Good / Poor | <u>Check fiberglass and joint connections</u> <u>Ok</u> |

General Comments:

The Kellogg Tunnel flow at this time is 0.88 mgd (610 gpm), pH at this time is 3.06.

The concrete flume walls are beginning to deteriorate approximately 6" up from the flume bottom.

The submerged area of the concrete is pitting and is now approximately 1/2" indented.

Alternate hand held staff gauge was used to verify flume staff gauge and flow meter readings.

Ultrasonic flow meter calibration was correct, no adjustments were needed.

Operators collected no sediment from the flume area.

CTP Mine Water Line Open Channel Inspection Form

**Note: This form should be utilized weekly during the regular channel cleanout.
Results will be include with the Daily Quality Control Report and monthly DMR.**

Date: September 29, 2016 Inspected By: Gary Coast, Steve Brunner

| Item Inspected | Condition | Comments |
|-----------------------------------|--------------------|---|
| Channel Sections and Joints | Good / Poor | <u>Check for cracks</u> <u>Ok</u> |
| Channel Inlet Connection @ KT | Good / Poor | <u>Check for cracks</u> <u>Ok</u> |
| Channel Outlet/Pipeline Inlet | Good / Poor | <u>Check for cracks</u> <u>Ok</u> |
| Channel Bottom (during low flows) | Good / Poor | <u>Ok</u> |
| Bottom Joints (during low flows) | Good / Poor | <u>Ok</u> |
| Trash Rack Assembly Rail Units | Good / Poor | <u>Check for corrosion and bolt tightness</u> <u>Ok</u> |
| Trash Racks | Good / Poor | <u>Removed debris from trash racks</u> |
| Parshall Flume | Good / Poor | <u>Check fiberglass and joint connections</u> <u>Ok</u> |

General Comments:

The Kellogg Tunnel flow at this time is 0.89 mgd (620 gpm), pH at this time is 3.39.

The concrete flume walls are beginning to deteriorate approximately 6" up from the flume bottom.

The submerged area of the concrete is pitting and is now approximately 1/2" indented.

Alternate hand held staff gauge was used to verify flume staff gauge and flow meter readings.

Ultrasonic flow meter calibration was correct, no adjustments were needed.

Operators collected no sediment from the flume area.



One Government Gulch - PO Box 929

Kellogg ID 83837-0929

(208) 784-1258

Fax (208) 783-0891

Ferguson Contracting
901 N. Division
Pinehurst, ID 83850

Project: BHCTP

Sampled: 01-Sep-16
Received: 02-Sep-16
Reported: 07-Sep-16 11:06

| LAB # | WS0025-01 | WS0025-02 | - | - | - | - |
|---|------------------|------------------|--------|---|---|---|
| SAMPLE ID | KT-09-01-16 | CTP06-09-01-16 | - | - | - | - |
| | 09/01/2016 07:30 | 09/01/2016 07:00 | - | - | - | - |
| | Reporting Limit | | | | | |
| Metals [Total] (Water) | | | | | | |
| Cadmium | 0.0100 mg/L | 0.169 | 0.0512 | - | - | - |
| Lead | 0.0500 mg/L | 0.421 | 0.328 | - | - | - |
| Manganese | 0.0200 mg/L | 29.7 | - | - | - | - |
| Zinc | 0.020 mg/L | 93.9 [1] | 0.890 | - | - | - |
| Classical Chemistry Parameters (Water) | | | | | | |
| pH | pH Units | 2.91 [2] | - | - | - | - |
| Total Susp. Solids | 5.0 mg/L | 19.0 | - | - | - | - |

John Kern
Laboratory Director



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| Ferguson Contracting 901 N. Division Pinehurst, ID 83850 | Project: BHCTP | Sampled: 02-Sep-16 Received: 02-Sep-16 Reported: 06-Sep-16 15:42 |
|---|-----------------------|---|

| LAB # | W60024-01 | - | - | - | - | - |
|---|------------------|-------------|---|---|---|---|
| SAMPLE ID | 006-09-02-16 | - | - | - | - | - |
| | 09/02/2016 06:00 | - | - | - | - | - |
| | Reporting Limit | | | | | |
| Metals [Total] (Water) | | | | | | |
| Cadmium | 0.0100 mg/L | 0.0044 [2] | - | - | - | - |
| Lead | 0.0500 mg/L | <0.0036 [4] | - | - | - | - |
| Manganese | 0.0200 mg/L | 23.3 [3] | - | - | - | - |
| Zinc | 0.020 mg/L | 0.225 | - | - | - | - |
| Classical Chemistry Parameters (Water) | | | | | | |
| pH | pH Units | 7.16 [1] | - | - | - | - |
| Total Susp. Solids | 5.0 mg/L | 0.6 [2] | - | - | - | - |

John Kern
Laboratory Director



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| Ferguson Contracting 901 N. Division Pinehurst, ID 83850 | Project: BHCTP | Sampled: 05-Sep-16 Received: 06-Sep-16 Reported: 07-Sep-16 11:12 |
|---|-----------------------|---|

| LAB # | W60054-01 | - | - | - | - | - |
|---|------------------|-------------|---|---|---|---|
| SAMPLE ID | 006-09-05-16 | - | - | - | - | - |
| | 09/05/2016 06:00 | - | - | - | - | - |
| | Reporting Limit | | | | | |
| Metals [Total] (Water) | | | | | | |
| Cadmium | 0.0100 mg/L | 0.0029 [2] | - | - | - | - |
| Lead | 0.0500 mg/L | <0.0036 [3] | - | - | - | - |
| Manganese | 0.0200 mg/L | 7.92 | - | - | - | - |
| Zinc | 0.020 mg/L | 0.176 | - | - | - | - |
| Classical Chemistry Parameters (Water) | | | | | | |
| pH | pH Units | 7.16 [1] | - | - | - | - |
| Total Susp. Solids | 5.0 mg/L | 1.0 | - | - | - | - |

John Kern
Laboratory Director



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| Ferguson Contracting 901 N. Division Pinehurst, ID 83850 | Project: BHCTP | Sampled: 05-Sep-16 Received: 06-Sep-16 Reported: 08-Sep-16 14:00 |
|---|-----------------------|---|

| LAB # | WS0055-01 | WS0055-02 | WS0055-03 | WS0055-04 | - | - |
|---|------------------|------------------|------------------|------------------|-------------|---|
| SAMPLE ID | KT-09-05-16 | QC-09-05-16 | RB-09-05-16 | TB-09-05-16 | - | - |
| | 09/05/2016 07:30 | 09/05/2016 07:30 | 09/05/2016 07:30 | 09/05/2016 07:30 | - | - |
| | Reporting Limit | | | | | |
| Metals [Total] (Water) | | | | | | |
| Cadmium | 0.0100 mg/L | 0.0651 | 0.0839 | <0.0009 [4] | <0.0009 [4] | - |
| Lead | 0.0500 mg/L | 0.448 | 0.452 | <0.0036 [4] | <0.0036 [4] | - |
| Manganese | 0.0200 mg/L | 79.3 | 83.1 | - | - | - |
| Zinc | 0.020 mg/L | 52.8 [1] | 54.2 [1] | 0.006 [3] | <0.003 [4] | - |
| Classical Chemistry Parameters (Water) | | | | | | |
| pH | pH Units | 3.28 [2] | 3.30 [2] | - | - | - |
| Total Susp. Solids | 5.0 mg/L | 82.0 | 82.0 | - | - | - |

John Kern
Laboratory Director



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| Ferguson Contracting 901 N. Division Pinehurst, ID 83850 | Project: BHCTP | Sampled: 07-Sep-16 Received: 07-Sep-16 Reported: 08-Sep-16 13:26 |
|---|-----------------------|---|

| LAB # | W60076-01 | - | - | - | - | - |
|---|------------------|-------------|---|---|---|---|
| SAMPLE ID | 006-09-07-16 | - | - | - | - | - |
| | 09/07/2016 06:00 | - | - | - | - | - |
| | Reporting Limit | | | | | |
| Metals [Total] (Water) | | | | | | |
| Cadmium | 0.0100 mg/L | 0.0035 [2] | - | - | - | - |
| Lead | 0.0500 mg/L | <0.0036 [3] | - | - | - | - |
| Manganese | 0.0200 mg/L | 15.5 | - | - | - | - |
| Zinc | 0.020 mg/L | 0.183 | - | - | - | - |
| Classical Chemistry Parameters (Water) | | | | | | |
| pH | pH Units | 6.68 [1] | - | - | - | - |
| Total Susp. Solids | 5.0 mg/L | 0.6 [2] | - | - | - | - |

John Kern
Laboratory Director



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Kellogg ID 83837-0929

(208) 784-1258

Fax (208) 783-0891

Ferguson Contracting
901 N. Division
Pinehurst, ID 83850

Project: BHCTP

Sampled: 08-Sep-16
Received: 09-Sep-16
Reported: 14-Sep-16 13:14

| LAB # | | W60173-01 | W60173-02 | W60173-03 | - | - | - |
|---|-----------------|------------------|------------------|------------------|---|---|---|
| SAMPLE ID | | KT-09-08-16 | PTM-09-08-16 | CTYXX-09-08-16 | - | - | - |
| | Reporting Limit | 09/08/2016 07:30 | 09/08/2016 07:30 | 09/08/2016 08:00 | - | - | - |
| Metals [Total] (Water) | | | | | | | |
| Cadmium | 0.0100 mg/L | 0.0784 | 1.30 | 0.0536 | - | - | - |
| Lead | 0.0500 mg/L | 0.416 | 0.0098 [3] | 0.330 | - | - | - |
| Manganese | 0.0200 mg/L | 76.6 | - | - | - | - | - |
| Zinc | 0.020 mg/L | 49.8 [1] | 10.0 | 0.991 | - | - | - |
| Classical Chemistry Parameters (Water) | | | | | | | |
| pH | pH Units | 3.29 [2] | 6.77 [2] | - | - | - | - |
| Total Susp. Solids | 5.0 mg/L | 81.0 | 0.6 [3] | - | - | - | - |

John Kern
Laboratory Director



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| Ferguson Contracting 901 N. Division Pinehurst, ID 83850 | Project: BHCTP | Sampled: 09-Sep-16 Received: 09-Sep-16 Reported: 12-Sep-16 13:22 |
|---|-----------------------|---|

| LAB # | W60172-01 | - | - | - | - | - |
|---|------------------|-------------|---|---|---|---|
| SAMPLE ID | 006-09-09-16 | - | - | - | - | - |
| | 09/09/2016 06:00 | - | - | - | - | - |
| | Reporting Limit | | | | | |
| Metals [Total] (Water) | | | | | | |
| Cadmium | 0.0100 mg/L | 0.0034 [2] | - | - | - | - |
| Lead | 0.0500 mg/L | <0.0036 [3] | - | - | - | - |
| Manganese | 0.0200 mg/L | 20.9 | - | - | - | - |
| Zinc | 0.020 mg/L | 0.167 | - | - | - | - |
| Classical Chemistry Parameters (Water) | | | | | | |
| pH | pH Units | 7.10 [1] | - | - | - | - |
| Total Susp. Solids | 5.0 mg/L | 1.2 | - | - | - | - |

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| Ferguson Contracting 901 N. Division Pinehurst, ID 83850 | Project: BHCTP | Sampled: 12-Sep-16 Received: 12-Sep-16 Reported: 13-Sep-16 14:42 |
|---|-----------------------|---|

| LAB # | W60222-01 | - | - | - | - | - |
|---|------------------|-------------|---|---|---|---|
| SAMPLE ID | 006-09-12-16 | - | - | - | - | - |
| | 09/12/2016 06:00 | - | - | - | - | - |
| | Reporting Limit | | | | | |
| Metals [Total] (Water) | | | | | | |
| Cadmium | 0.0100 mg/L | 0.0029 [2] | - | - | - | - |
| Lead | 0.0500 mg/L | <0.0036 [4] | - | - | - | - |
| Manganese | 0.0200 mg/L | 21.5 [3] | - | - | - | - |
| Zinc | 0.020 mg/L | 0.150 | - | - | - | - |
| Classical Chemistry Parameters (Water) | | | | | | |
| pH | pH Units | 7.15 [1] | - | - | - | - |
| Total Susp. Solids | 5.0 mg/L | 1.0 | - | - | - | - |

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Laboratory Director



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|---|-----------------------|---|
| Ferguson Contracting 901 N. Division Pinehurst, ID 83850 | Project: BHCTP | Sampled: 12-Sep-16 Received: 12-Sep-16 Reported: 15-Sep-16 10:39 |
|---|-----------------------|---|

| LAB # | W60223-01 | W60223-02 | - | - | - | - |
|---|------------------|------------------|----------|---|---|---|
| SAMPLE ID | QC-09-12-16 | K5-09-12-16 | - | - | - | - |
| | 09/12/2016 06:00 | 09/12/2016 07:30 | - | - | - | - |
| | Reporting Limit | | | | | |
| Metals [Total] (Water) | | | | | | |
| Cadmium | 0.0100 mg/L | 0.0777 | 0.0782 | - | - | - |
| Lead | 0.0500 mg/L | 0.417 | 0.411 | - | - | - |
| Manganese | 0.0200 mg/L | 76.6 [2] | 76.9 | - | - | - |
| Zinc | 0.020 mg/L | 44.8 [2] | 43.7 | - | - | - |
| Classical Chemistry Parameters (Water) | | | | | | |
| pH | pH Units | 3.43 [1] | 3.42 [1] | - | - | - |
| Total Susp. Solids | 5.0 mg/L | 70.0 | 72.0 | - | - | - |

John Kern
Laboratory Director



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|---|-----------------------|---|
| Ferguson Contracting 901 N. Division Pinehurst, ID 83850 | Project: BHCTP | Sampled: 14-Sep-16 Received: 14-Sep-16 Reported: 15-Sep-16 13:46 |
|---|-----------------------|---|

| LAB # | W60294-01 | - | - | - | - | - |
|---|------------------|-------------|---|---|---|---|
| SAMPLE ID | 006-09-14-16 | - | - | - | - | - |
| | 09/14/2016 06:00 | - | - | - | - | - |
| | Reporting Limit | | | | | |
| Metals [Total] (Water) | | | | | | |
| Cadmium | 0.0100 mg/L | 0.0029 [2] | - | - | - | - |
| Lead | 0.0500 mg/L | <0.0036 [4] | - | - | - | - |
| Manganese | 0.0200 mg/L | 22.1 [3] | - | - | - | - |
| Zinc | 0.020 mg/L | 0.151 | - | - | - | - |
| Classical Chemistry Parameters (Water) | | | | | | |
| pH | pH Units | 7.06 [1] | - | - | - | - |
| Total Susp. Solids | 5.0 mg/L | 1.4 | - | - | - | - |

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Laboratory Director



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|---|-----------------------|---|
| Ferguson Contracting 901 N. Division Pinehurst, ID 83850 | Project: BHCTP | Sampled: 15-Sep-16 Received: 16-Sep-16 Reported: 20-Sep-16 09:31 |
|---|-----------------------|---|

| LAB # | WS0408-01 | WS0408-02 | - | - | - | - |
|---|------------------|------------------|--------|---|---|---|
| SAMPLE ID | KT-09-15-16 | CTP06-09-15-16 | - | - | - | - |
| | 09/15/2016 07:30 | 09/15/2016 07:00 | - | - | - | - |
| | Reporting Limit | | | | | |
| Metals [Total] (Water) | | | | | | |
| Cadmium | 0.0100 mg/L | 0.166 | 0.0525 | - | - | - |
| Lead | 0.0500 mg/L | 0.406 | 0.322 | - | - | - |
| Manganese | 0.0200 mg/L | 29.9 | - | - | - | - |
| Zinc | 0.020 mg/L | 97.2 [1] | 0.906 | - | - | - |
| Classical Chemistry Parameters (Water) | | | | | | |
| pH | pH Units | 2.92 [2] | - | - | - | - |
| Total Susp. Solids | 5.0 mg/L | 10.0 | - | - | - | - |

John Kern
Laboratory Director



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|---|-----------------------|---|
| Ferguson Contracting 901 N. Division Pinehurst, ID 83850 | Project: BHCTP | Sampled: 16-Sep-16 Received: 16-Sep-16 Reported: 19-Sep-16 15:53 |
|---|-----------------------|---|

| LAB # | WS0407-01 | - | - | - | - | - |
|---|------------------|--------------|---|---|---|---|
| SAMPLE ID | 006-09-16-16 | - | - | - | - | - |
| | 09/16/2016 06:00 | - | - | - | - | - |
| | Reporting Limit | | | | | |
| Metals [Total] (Water) | | | | | | |
| Cadmium | 0.0100 mg/L | 0.0026 [2] | - | - | - | - |
| Lead | 0.0500 mg/L | <0.0036 [4] | - | - | - | - |
| Manganese | 0.0200 mg/L | 12.0 | - | - | - | - |
| Zinc | 0.020 mg/L | 0.155 | - | - | - | - |
| Classical Chemistry Parameters (Water) | | | | | | |
| pH | pH Units | 7.08 [1] [5] | - | - | - | - |
| Total Susp. Solids | 5.0 mg/L | 0.6 [2] | - | - | - | - |

John Kern
Laboratory Director



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| Ferguson Contracting 901 N. Division Pinehurst, ID 83850 | Project: BHCTP | Sampled: 19-Sep-16 Received: 19-Sep-16 Reported: 20-Sep-16 14:31 |
|---|-----------------------|---|

| LAB # | W60449-01 | - | - | - | - | - |
|---|------------------|-------------|---|---|---|---|
| SAMPLE ID | 006-09-19-16 | - | - | - | - | - |
| | 09/19/2016 06:00 | - | - | - | - | - |
| | Reporting Limit | | | | | |
| Metals [Total] (Water) | | | | | | |
| Cadmium | 0.0100 mg/L | 0.0028 [2] | - | - | - | - |
| Lead | 0.0500 mg/L | <0.0036 [4] | - | - | - | - |
| Manganese | 0.0200 mg/L | 13.9 [3] | - | - | - | - |
| Zinc | 0.020 mg/L | 0.117 | - | - | - | - |
| Classical Chemistry Parameters (Water) | | | | | | |
| pH | pH Units | 7.19 [1] | - | - | - | - |
| Total Susp. Solids | 5.0 mg/L | 1.6 | - | - | - | - |

John Kern
Laboratory Director



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Kellogg ID 83837-0929

(208) 784-1258

Fax (208) 783-0891

Ferguson Contracting
901 N. Division
Pinehurst, ID 83850

Project: BHCTP

Sampled: 19-Sep-16
Received: 19-Sep-16
Reported: 20-Sep-16 14:30

| LAB # | W60451-01 | - | - | - | - | - |
|---|------------------|----------|---|---|---|---|
| SAMPLE ID | KT-09-19-16 | - | - | - | - | - |
| | 09/19/2016 07:30 | - | - | - | - | - |
| | Reporting Limit | | | | | |
| Metals [Total] (Water) | | | | | | |
| Cadmium | 0.0100 mg/L | 0.0755 | - | - | - | - |
| Lead | 0.0500 mg/L | 0.416 | - | - | - | - |
| Manganese | 0.0200 mg/L | 76.3 [2] | - | - | - | - |
| Zinc | 0.020 mg/L | 43.5 [2] | - | - | - | - |
| Classical Chemistry Parameters (Water) | | | | | | |
| pH | pH Units | 3.40 [1] | - | - | - | - |
| Total Susp. Solids | 5.0 mg/L | 71.0 | - | - | - | - |

John Kern
Laboratory Director



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| Ferguson Contracting 901 N. Division Pinehurst, ID 83850 | Project: BHCTP | Sampled: 21-Sep-16 Received: 21-Sep-16 Reported: 22-Sep-16 12:41 |
|---|-----------------------|---|

| LAB # | W60216-01 | - | - | - | - | - |
|---|------------------|-------------|---|---|---|---|
| SAMPLE ID | 006-09-21-16 | - | - | - | - | - |
| | 09/21/2016 06:00 | - | - | - | - | - |
| | Reporting Limit | | | | | |
| Metals [Total] (Water) | | | | | | |
| Cadmium | 0.0100 mg/L | 0.0027 [2] | - | - | - | - |
| Lead | 0.0500 mg/L | <0.0036 [4] | - | - | - | - |
| Manganese | 0.0200 mg/L | 18.6 [3] | - | - | - | - |
| Zinc | 0.020 mg/L | 0.335 | - | - | - | - |
| Classical Chemistry Parameters (Water) | | | | | | |
| pH | pH Units | 7.05 [1] | - | - | - | - |
| Total Susp. Solids | 5.0 mg/L | 1.4 | - | - | - | - |

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Laboratory Director



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Kellogg ID 83837-0929

(208) 784-1258

Fax (208) 783-0891

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Pinehurst, ID 83850

Project: BHCTP

Sampled: 22-Sep-16
Received: 23-Sep-16
Reported: 29-Sep-16 09:47

| LAB # | WS0615-01 | WS0615-02 | WS0615-03 | - | - | - |
|---|------------------|------------------|------------------|--------|---|---|
| SAMPLE ID | KT-09-22-16 | PTM-09-22-16 | CTYXX-09-22-16 | - | - | - |
| | 09/22/2016 07:30 | 09/22/2016 08:00 | 09/22/2016 07:00 | - | - | - |
| | Reporting Limit | | | | | |
| Metals [Total] (Water) | | | | | | |
| Cadmium | 0.0100 mg/L | 0.171 | 1.38 | 0.0551 | - | - |
| Lead | 0.0500 mg/L | 0.415 | -0.0096 [5] | 0.333 | - | - |
| Manganese | 0.0200 mg/L | 31.4 | - | - | - | - |
| Zinc | 0.020 mg/L | 95.3 [1] | 10.5 | 0.954 | - | - |
| Classical Chemistry Parameters (Water) | | | | | | |
| pH | pH Units | 2.98 [2] | 6.69 [2] | - | - | - |
| Total Susp. Solids | 5.0 mg/L | 9.0 | 0.6 [3] | - | - | - |

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Laboratory Director



One Government Gulch - PO Box 929

Kellogg ID 83837-0929

(208) 784-1258

Fax (208) 783-0891

Ferguson Contracting
901 N. Division
Pinehurst, ID 83850

Project: BHCTP

Sampled: 22-Sep-16 to 23-Sep-16

Received: 23-Sep-16

Reported: 26-Sep-16 15:11

| LAB # | WS0614-01 | WS0614-02 | - | - | - | - |
|---|------------------|------------------|-------------|---|---|---|
| SAMPLE ID | QC-09-22-16 | 006-09-23-16 | - | - | - | - |
| | 09/22/2016 08:00 | 09/23/2016 06:00 | - | - | - | - |
| | Reporting Limit | | | | | |
| Metals [Total] (Water) | | | | | | |
| Cadmium | 0.0100 mg/L | 1.41 | 0.0024 [3] | - | - | - |
| Lead | 0.0500 mg/L | <0.0036 [5] | <0.0096 [5] | - | - | - |
| Manganese | 0.0200 mg/L | - | 10.0 | - | - | - |
| Zinc | 0.020 mg/L | 10.9 [1] | 0.199 [1] | - | - | - |
| Classical Chemistry Parameters (Water) | | | | | | |
| pH | pH Units | 6.58 [2] [4] | 7.31 [2] | - | - | - |
| Total Susp. Solids | 5.0 mg/L | 0.6 [3] | 1.0 | - | - | - |

John Kern
Laboratory Director



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| Ferguson Contracting 901 N. Division Pinehurst, ID 83850 | Project: BHCTP | Sampled: 26-Sep-16 Received: 26-Sep-16 Reported: 27-Sep-16 14:44 |
|---|-----------------------|---|

| LAB # | W60640-01 | - | - | - | - | - |
|---|------------------|-------------|---|---|---|---|
| SAMPLE ID | 006-09-26-16 | - | - | - | - | - |
| | 09/26/2016 06:00 | - | - | - | - | - |
| | Reporting Limit | | | | | |
| Metals [Total] (Water) | | | | | | |
| Cadmium | 0.0100 mg/L | 0.0020 [2] | - | - | - | - |
| Lead | 0.0500 mg/L | <0.0036 [4] | - | - | - | - |
| Manganese | 0.0200 mg/L | 16.0 [3] | - | - | - | - |
| Zinc | 0.020 mg/L | 0.125 | - | - | - | - |
| Classical Chemistry Parameters (Water) | | | | | | |
| pH | pH Units | 7.07 [1] | - | - | - | - |
| Total Susp. Solids | 5.0 mg/L | 0.6 [2] | - | - | - | - |

John Kern
Laboratory Director



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Kellogg ID 83837-0929

(208) 784-1258

Fax (208) 783-0891

Ferguson Contracting
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Pinehurst, ID 83850

Project: BHCTP

Sampled: 26-Sep-16
Received: 26-Sep-16
Reported: 29-Sep-16 09:48

| LAB # | W60641-01 | - | - | - | - | - |
|---|------------------|----------|---|---|---|---|
| SAMPLE ID | KT-09-26-16 | - | - | - | - | - |
| | 09/26/2016 07:30 | - | - | - | - | - |
| | Reporting Limit | | | | | |
| Metals [Total] (Water) | | | | | | |
| Cadmium | 0.0100 mg/L | 0.0723 | - | - | - | - |
| Lead | 0.0500 mg/L | 0.416 | - | - | - | - |
| Manganese | 0.0200 mg/L | 77.7 [3] | - | - | - | - |
| Zinc | 0.020 mg/L | 42.8 [3] | - | - | - | - |
| Classical Chemistry Parameters (Water) | | | | | | |
| pH | pH Units | 9.42 [1] | - | - | - | - |
| Total Susp. Solids | 5.0 mg/L | 69.0 | - | - | - | - |

John Kern
Laboratory Director



One Government Gulch - PO Box 929

Kellogg ID 83837-0929

(208) 784-1258

Fax (208) 783-0891

Ferguson Contracting
901 N. Division
Pinehurst, ID 83850

Project: BHCTP

Sampled: 28-Sep-16
Received: 28-Sep-16
Reported: 29-Sep-16 13:00

| LAB # | WS10692-01 | WS10692-02 | - | - | - | - |
|---|------------------|------------------|-------------|---|---|---|
| SAMPLE ID | 006-09-28-16 | QC-09-28-16 | - | - | - | - |
| | 09/28/2016 06:00 | 09/28/2016 06:00 | - | - | - | - |
| | Reporting Limit | | | | | |
| Metals [Total] (Water) | | | | | | |
| Cadmium | 0.0100 mg/L | 0.0027 [2] | 0.0024 [2] | - | - | - |
| Lead | 0.0500 mg/L | <0.0036 [4] | <0.0036 [4] | - | - | - |
| Manganese | 0.0200 mg/L | 20.3 [3] | 20.0 | - | - | - |
| Zinc | 0.020 mg/L | 0.145 | 0.141 | - | - | - |
| Classical Chemistry Parameters (Water) | | | | | | |
| pH | pH Units | 7.12 [1] | 6.84 [1] | - | - | - |
| Total Susp. Solids | 5.0 mg/L | 0.6 [2] | 0.6 [2] | - | - | - |

John Kern
Laboratory Director



| | | |
|---|-----------------------|---|
| Ferguson Contracting 901 N. Division Pinehurst, ID 83850 | Project: BHCTP | Sampled: 29-Sep-16 Received: 30-Sep-16 Reported: 04-Oct-16 09:17 |
|---|-----------------------|---|

| LAB # | WSK0778-01 | WSK0778-02 | - | - | - | - |
|---|------------------|------------------|--------|---|---|---|
| SAMPLE ID | KT-09-29-16 | CTP06-09-29-16 | - | - | - | - |
| | 09/29/2016 07:30 | 09/29/2016 07:00 | - | - | - | - |
| | Reporting Limit | | | | | |
| Metals [Total] (Water) | | | | | | |
| Cadmium | 0.0100 mg/L | 0.178 | 0.0586 | - | - | - |
| Lead | 0.0500 mg/L | 0.453 | 0.354 | - | - | - |
| Manganese | 0.0200 mg/L | 31.0 | - | - | - | - |
| Zinc | 0.020 mg/L | 93.9 [1] | 1.00 | - | - | - |
| Classical Chemistry Parameters (Water) | | | | | | |
| pH | pH Units | 2.95 [2] | - | - | - | - |
| Total Susp. Solids | 5.0 mg/L | 12.0 | - | - | - | - |

John Kern
Laboratory Director



| | | |
|---|-----------------------|---|
| Ferguson Contracting 901 N. Division Pinehurst, ID 83850 | Project: BHCTP | Sampled: 30-Sep-16 Received: 30-Sep-16 Reported: 03-Oct-16 13:27 |
|---|-----------------------|---|

| LAB # | W610777-01 | - | - | - | - | - |
|---|------------------|-------------|---|---|---|---|
| SAMPLE ID | 006-09-30-16 | - | - | - | - | - |
| | 09/30/2016 06:00 | - | - | - | - | - |
| | Reporting Limit | | | | | |
| Metals [Total] (Water) | | | | | | |
| Cadmium | 0.0100 mg/L | 0.0028 [2] | - | - | - | - |
| Lead | 0.0500 mg/L | <0.0036 [4] | - | - | - | - |
| Manganese | 0.0200 mg/L | 15.6 [3] | - | - | - | - |
| Zinc | 0.020 mg/L | 0.159 | - | - | - | - |
| Classical Chemistry Parameters (Water) | | | | | | |
| pH | pH Units | 7.18 [1] | - | - | - | - |
| Total Susp. Solids | 5.0 mg/L | 0.8 [2] | - | - | - | - |

 Kirby Gray
Technical Director